

REMARKS

Claims 1, 3-14, and 20-28 are pending in the application. Claims 5-8 are withdrawn from consideration

In the Office Action, claims 11-13 and 20-28 were rejected under 35 U.S.C. 112, second paragraph, with respect to the recited limitations in claims 11 and 28 as set forth on page 2 of the Office Action. Amendments are now made to claims 10 and 28 so as to overcome the 35 U.S.C. 112, second paragraph, rejection. Accordingly, the Examiner is now requested to reconsider and withdraw the rejection.

Claims 1, 3, 4, 9-12, 21, 23-26 and 28 were rejected under 35 U.S.C. 102(b) as being anticipated by *Hamamoto* (U.S. Pat. 6,205,163). Claims 13 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Hamamoto* in view of *Towe et al.* (U.S. Pat. 4,827,482). Claims 14 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Hamamoto* in view of *Mazed*. Claim 20 was noted to be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, and including all of the limitations of the base claim and any intervening claims.

Applicant's independent claim 1 is now amended to recite that the laser region, which includes a plurality of laser emission portions, have a common modulation electrode traversing and covering only the laser emission portions and

wherein the laser material comprising the first waveguiding layer of the multi-mode interference region is different from the material comprising the active layers of the laser emission portions.

Independent claim 28 is likewise amended to recite the limitations of a semiconductor laser region which includes a plurality of laser emission portions and having a common modulation electrode traversing all of the laser emission portions and covering only the laser emission portions for operating the laser emission portions in a single mode and wherein the material comprising the plurality of second waveguiding layers of the multi-mode interference region is different from that of the active layers of the laser emission portions.

It is respectfully submitted that these limitations patentably define over the *Hamamoto* reference which discloses a device wherein the entire region of Figure 1 is a resonator and the laser oscillation current is injected into the entire region. Applicant's claimed invention, on the other hand, is directed to a laser element wherein a region 20b, which includes a plurality of laser emission portions, is the only laser emission portion as shown in Figures 6 and 8 of applicant's drawings.

Hamamoto also differs from the subject invention, as now claimed, in that *Hamamoto* provides a common electrode across the top of the entire structure, such as shown in Figure 8 thereof, whereas applicant's common modulation electrode covers only the laser emission portion. Furthermore, in the device of *Hamamoto*, both the active layer and the waveguiding layer are formed of the same

material. On the other hand, in the applicant's claimed invention, the active layers and the waveguiding layer are made from different materials which are optically joined together with each other. This is admitted by the Examiner, at page 3 of the Office Action, wherein the fourth to the sixth lines from the bottom, states "As can be seen from Figures 4 and 5, *Hamamoto* discloses that the entire device is made from the same layers. Layer 3 functions as both an active layer and a waveguide layer. Further, electrode 7 covers all sections." Thus, it is respectfully submitted that the applicant now claims structural differences which patentably define over *Hamamoto's* device.

Accordingly, independent claims 1 and 28 are now deemed to be in condition for allowance and all dependent claims depending therefrom become allowable by virtue of their dependencies therefrom.

The advantages of the present invention include: (1) providing a single oscillation laser element which operates stably at high power for a long period and produces an almost perfectly circular emission pattern; and (2) providing a high power single mode oscillation laser element which can perform high speed modulation. For example, it possible to provide a semiconductor laser element which generates high power laser light and realizes high speed modulation. Furthermore, the optical emission pattern is almost perfectly circular and can operate at 200mW for about one hundred thousand hours with high reliability as noted in the specification at page 45, lines 17-23.

Conclusion

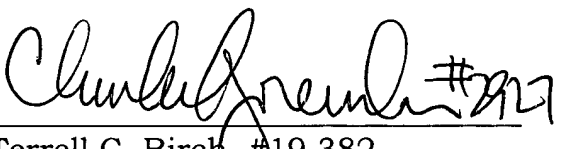
Since all of the claims now present in the application are deemed to be in condition for allowance, further and favorable action is requested.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact William L. Gates (Reg. No. 20,848) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #19,382
Terrell C. Birch, #19,382


TCB/WLG/mpe
0717-0446P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

Attachment(s)